## TECHNICAL REVIEW DOCUMENT OPERATING PERMIT 020PWE247

to be issued to:

### Public Service Company of Colorado Yosemite Air Blend Plant

Weld County Source ID 1230141

Prepared by Cathy Rhodes November 2002

## I. Purpose:

This document establishes the basis for decisions made regarding the Applicable Requirements, Emission Factors, Monitoring Plan and Compliance Status of Emission Units covered within the Operating Permit proposed for this site. It is designed for reference during review of the proposed permit by the EPA, the Public and other interested parties. Conclusions made in this report are based on information provided by the applicant in the Title V application submitted August 19, 2002, subsequent additional information submittals, and review of Division files. This narrative is intended only as an adjunct for the reviewer and has no legal standing.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised Construction Permit.

The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permits 00WE0804 and 01WE0929, but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part B, Section V.A.3, the Division will not issue final approval construction permits and is allowing the initial approval construction permits to continue in full force and effect. The appropriate provisions of the initial approval construction permits have been directly incorporated into this operating permit.

### **II.** Source Description:

The Yosemite Air Blend Plant is a natural gas blending facility. The facility uses six natural gas fired internal combustion engines for compressed air blending. The facility is defined under Standard Industrial Classification 4922. A portable incinerator is used to dispose of paper and wood waste.

The facility is located at 934 Weld County Road 19, Brighton, Weld County. The area is designated as attainment for all pollutants. The facility is considered to be a synthetic minor source for Prevention of Significant Deterioration purposes and a major source for Maximum Achievable Control Technology purposes.

Facility wide emissions (tons/year) are as follows:

Pollutant	Actual Emissions	Potential to Emit
NO <sub>X</sub>	34.0	122.8
CO	77.4	238.6
VOC	29.4	64.8
Formaldehyde	5.9	15.3
Total HAPs	7.5	19.5

Potential to Emit is based on permitted emission limits. Actual emissions are as reported in the Operating Permit application.

Rocky Mountain National Park is a Federal Class I designated area within 100 kilometers of this facility. There are no affected states within 50 miles of this facility.

This facility certified within the Title V permit application they are not subject to 112(r), the Accidental Release Requirements.

#### III. Emission Sources:

The following sources are specifically regulated under terms and conditions of the Operating Permit for this Site:

<u>Unit S001</u> - One (1) Waukesha, L5108GL, S/N 398630, low-NOx Design, site rated at 720 HP, natural gas fired internal combustion reciprocating engine. Waukesha Air Compressor #1.

### 1. Applicable Requirements

Final Approval Construction Permit 87WE006-1 was issued for this unit. The following applicable requirements have been identified for these units:

Construction Permit 87WE006-1

 Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 1 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)

- Limits emissions of criteria pollutants on an annual basis. (Condition 3) The
  operating permit requires compliance on a rolling twelve month basis, in
  accordance with the Division's short term limit policy.
- Limits consumption of natural gas on an annual basis. (Condition 4) The
  operating permit requires compliance on a rolling twelve month basis, in
  accordance with the Division's short term limit policy.
- The unit is subject to the provisions of a November 2, 1998 Compliance Order on Consent. (Condition 6) The Order requires the permittee to take emission measurements of NOx and CO from Unit 1 every 2,200 hours of operation for two (2) years and every 4,400 hours of operation for the next three (3) years using a portable flue gas analyzer. The Order sets forth recordkeeping and reporting requirements. Four years have elapsed, therefore the permittee is subject to the Order requirements for one more year.
- **2. Emission Factors-** The pollutants of concern are Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. NOx, CO and VOC emissions are based on manufacturer's data. HAP emission factors are based on AP-42, Section 3.2.
- 3. Monitoring Plan- The source shall be required to monitor compliance with the emission limits by monitoring fuel consumption and using emission factors based on heat input. The source shall be required to record fuel consumption and calculate emissions monthly. Specific monitoring guidance for Internal Combustion Engines located in attainment areas has been developed by the Division, as shown on the attached grid, titled "Compliance/Scenario Summary – Gas Fired IC Engines." Facility CO emissions are between 200 and 250 tons/year. The NOx emission factor proposed for engines #1 through #4 is less than AP-42 factors. Proposed CO and VOC emission factors for all engines are greater than AP-42 factors. Therefore, according to the monitoring grid, the permittee will be required to perform emission calculations and record fuel use on a monthly basis. The heat content of the natural gas shall be determined semiannually through either sampling and analysis or use of vendor analyses. In addition, quarterly portable analyzer monitoring for NOx and CO is required for all engines at the facility. In the absence of credible evidence to the contrary, compliance with the opacity limits shall be presumed provided natural gas is used as fuel.
- **4. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.

Unit S002 - Waukesha, L5108GL, S/N 398631, Low-NOx design, site rated at

# 720 HP, natural gas fired internal combustion reciprocating engine - Waukesha Air Compressor #2

### 1. Applicable Requirements

Final Approval Construction Permit 87WE006-2 was issued for this unit. The following applicable requirements have been identified for these units:

Construction Permit 87WE006-2

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 1 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)
- Limits emissions of criteria pollutants on an annual basis. (Condition 3) The operating permit requires compliance on a rolling twelve month basis, in accordance with the Division's short term limit policy.
- Limits consumption of natural gas on an annual basis. (Condition 4) The
  operating permit requires compliance on a rolling twelve month basis, in
  accordance with the Division's short term limit policy.
- **2. Emission Factors-** The pollutants of concern are Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. NOx, CO, and VOC emissions are based on manufacturer's data. HAP emission factors are based on AP-42, Section 3.2.
- **3. Monitoring Plan-** The source shall be required to monitor compliance with the emission limits by monitoring fuel consumption and using emission factors based on heat input. The source shall be required to record fuel consumption and calculate emissions monthly and perform quarterly portable analyzer monitoring. The heat content of the natural gas shall be determined semiannually through either sampling and analysis or use of vendor analyses. In the absence of credible evidence to the contrary, compliance with the opacity limits shall be presumed provided natural gas is used as fuel.
- **4. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.

Unit S003 - Waukesha, 7042GL, S/N C-10336/1, site rated at 1148 HP,

# low-NOx design, natural gas fired internal combustion reciprocating engine - Waukesha Air Compressor #3

## 1. Applicable Requirements

Final Approval Construction Permit 95WE461 was issued for this unit. The following applicable requirements have been identified for these units:

#### Construction Permit 95WE461

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 1 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)
- Limits emissions of criteria pollutants on an annual basis. (Condition 3) The operating permit requires compliance on a rolling twelve month basis, in accordance with the Division's short term limit policy.
- Limits consumption of natural gas on an annual basis. (Condition 4) The
  operating permit requires compliance on a rolling twelve month basis, in
  accordance with the Division's short term limit policy.
- **2. Emission Factors-** The pollutants of concern are Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. NOx, CO, and VOC emissions are based on manufacturer's data. HAP emission factors are based on AP-42, Section 3.2.
- **3. Monitoring Plan-** The source shall be required to monitor compliance with the emission limits by monitoring fuel consumption and using emission factors based on heat input. The source shall be required to record fuel consumption and calculate emissions monthly and perform quarterly portable analyzer monitoring. The heat content of the natural gas shall be determined semiannually through either sampling and analysis or use of vendor analyses. In the absence of credible evidence to the contrary, compliance with the opacity limits shall be presumed provided natural gas is used as fuel.
- **3. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.

Unit S004 - Waukesha, 7042GL, S/N C-11373/1, site rated at 1148 HP,

# low-NOx design, natural gas fired internal combustion reciprocating engine - Waukesha Air Compressor #4

## 1. Applicable Requirements

Final Approval Construction Permit 95WE379 was issued for this unit. The following applicable requirements have been identified for these units:

Construction Permit 95WE379

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 1 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)
- Limits emissions of criteria pollutants on an annual basis. (Condition 3) The operating permit requires compliance on a rolling twelve month basis, in accordance with the Division's short term limit policy.
- Limits consumption of natural gas on an annual basis. (Condition 4) The
  operating permit requires compliance on a rolling twelve month basis, in
  accordance with the Division's short term limit policy.
- **2. Emission Factors-** The pollutants of concern are Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. NOx, CO and VOC emissions are based on manufacturer's data. HAP emission factors are based on AP-42, Section 3.2.
- 3. Monitoring Plan- The source shall be required to monitor compliance with the emission limits by monitoring fuel consumption and using emission factors based on heat input. The source shall be required to record fuel consumption and calculate emissions monthly and perform quarterly portable analyzer monitoring. The heat content of the natural gas shall be determined semiannually through either sampling and analysis or use of vendor analyses. In the absence of credible evidence to the contrary, compliance with the opacity limits shall be presumed provided natural gas is used as fuel.
- **4. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.

Unit S005 - Caterpillar, G3608, S/N 4WF00199, site rated at 2368 HP,

# low-NOx design, natural gas fired internal combustion reciprocating engine - Air Compressor #6

## 1. Applicable Requirements

Initial Approval Construction Permit 00WE0804 was issued for this unit. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 00WE0804, but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part B, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. The following applicable requirements have been identified for these units:

#### Construction Permit 00WE0804

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 2 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)
- Limits emissions of criteria pollutants on a rolling twelve month basis. (Condition 7)
- Limits consumption of natural gas on a rolling twelve month basis. (Condition 6)
- Requires compliance tests for NOx, VOC, and CO. These tests were completed and verified the manufacturer's emission factors.
- **2. Emission Factors-** The pollutants of concern are Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. NOx, CO and VOC emissions are based on manufacturer's data. HAP emission factors are based on AP-42, Section 3.2.
- **3. Monitoring Plan-** The source shall be required to monitor compliance with the emission limits by monitoring fuel consumption and using emission factors based on heat input. The source shall be required to record fuel consumption and calculate emissions monthly and perform quarterly portable analyzer monitoring. The heat content of the natural gas shall be determined semiannually through either sampling and analysis or use of vendor analyses. In the absence of credible evidence to the contrary, compliance with the opacity limits shall be presumed provided natural gas is used as fuel.
- **4. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.

<u>Unit S006</u> – Caterpillar, G3612, S/N BKE00197, site rated at 3550 HP, low-NOx design, natural gas fired internal combustion reciprocating engine - Air Compressor #7

### 1. Applicable Requirements

Initial Approval Construction Permit 01WE0929 was issued for this unit. The source has demonstrated compliance under the provisions of Regulation No. 3, Part B, Section IV.H for initial approval construction permit 01WE0929, but not yet received a final approval construction permit. Under the provisions of Regulation No. 3, Part B, Section V.A.3, the Division will not issue a final approval construction permit and is allowing the initial approval construction permit to continue in full force and effect. The appropriate provisions of the initial approval construction permit have been directly incorporated into this operating permit. The following applicable requirements have been identified for these units:

#### Construction Permit 01WE0929

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 2 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)
- Limits emissions of criteria pollutants on a monthly and rolling twelve month basis. (Condition 7)
- Limits consumption of natural gas on a monthly and rolling twelve month basis. (Condition 6)
- Requires compliance tests for NOx and CO. These tests were completed, and verified the manufacturer's emission factors.
- **2. Emission Factors-** The pollutants of concern are Nitrogen Oxides (NO<sub>X</sub>), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. NOx, CO and VOC emissions are based on manufacturer's data. HAP emission factors are based on AP-42, Section 3.2.
- **3. Monitoring Plan-** The source shall be required to monitor compliance with the emission limits by monitoring fuel consumption and using emission factors based on heat input. The source shall be required to record fuel consumption and calculate emissions monthly and perform quarterly portable analyzer monitoring. The heat content of the natural gas shall be determined semiannually through either sampling and analysis or use of vendor analyses. Air/fuel ratio information will be monitored, and quarterly portable monitoring is required. In the absence of credible evidence to the contrary, compliance with the opacity limits shall be presumed provided natural gas is used as fuel.

**4. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.

## <u>Unit S007</u> – Elastec Inc. Smart Ash Incinerator, Model 100, S/N SA19594

### 1. Applicable Requirements

Final Approval Construction Permit 96WE424P was issued for this unit. The following applicable requirements have been identified for these units:

Construction Permit 96WE424P

- Visible emissions shall not exceed twenty percent (20%) opacity during normal operation of the source. During periods of startup, process modification, or adjustment of control equipment visible emissions shall not exceed 30% opacity for more than six minutes in any sixty consecutive minutes (Condition 2 and Colorado Regulation No. 1, Sections II.a.1 & 4). Note: The operating permit condition reflects the specific Regulation No. 1 language for this applicable requirement.)
- Unit is subject to the Standards of Performance for Incinerators, Colorado Regulation No. 6, Part B, Section VII (This is a state-only requirement) (Condition 3)

Limits opacity to 20%

Limits PM emissions to 0.10 grains per dry standard cubic foot @ 12% CO<sub>2</sub> Requires records of burning rates and hours of operation Subject to the General Requirements of 40 CFR Part 60, Subpart A (Condition 10 and Colorado Regulation No. 6, Part B, I.A)

- Limits charging rate (Condition 4)
- Prohibits burning of absorbent materials that contain volatile liquids. Limits flash point of burned materials (Condition 5)
- Prohibits overloading of combustion chamber (Condition 6)
- Prohibits use of liquid fuel as start-up fuel (Condition 7)
- Limits emissions of criteria pollutants on an annual basis (Condition 8)
   These limits are well below the Construction Permit de minimis levels,
   therefore they are not included in the Operating Permit. A Construction
   Permit was required because the unit is subject to the Standards of
   Performance for Incinerators
- Requires operation and maintenance in accordance with manufacturer's instructions. (Condition 9)
- Prohibits burning of radioactive or hazardous waste materials. (Condition 12)

- 3. Emission Factors- The pollutants of concern are Nitrogen Oxides ( $NO_X$ ), Carbon Monoxide (CO), and Volatile Organic Compounds (VOC). Hazardous Air Pollutants (HAPs) are also emitted dependent upon the makeup of the fuel and combustion efficiency. Emissions from this unit are based on manufacturer's data.
- **4. Monitoring Plan-** The permittee conducted emission tests to demonstrate compliance with the PM emission limit, and an initial opacity reading to demonstrate compliance with the opacity limit. The average tested PM emission rate was 0.028 gr/dscf, and the average opacity was 0.0%. Based on these results, the Division has determined that, absent credible evidence to the contrary, operation and maintenance in accordance with manufacturer's requirements will suffice to monitor compliance with the PM and opacity limits. Monthly records of the type and amount of material combusted, and hours of operation will be maintained.
- **5. Compliance Status-** The permittee indicated in their application that they are in compliance with all applicable requirements.
- **6. Minor Permit Modification Request** During the public notice period, the permittee submitted a minor permit modification request to replace the existing incinerator with a like-kind incinerator. The Division has determined that, at maximum operating rates, emissions of pollutants will be well below the significant emission levels (PM emissions of .6 ton/year and CO emissions of 2.2 tons/year), and therefore the request qualifies as a minor permit modification. All applicable requirements remain the same as for the incinerator included in the permit for public notice. The minor modification is being processed in tandem with the first issuance of this operating permit, and has been sent to the EPA for their 45 day review period.

## IV. Insignificant Activities

Colorado Regulation No. 3, Part C, II.E states that sources may not take any insignificant activity exemptions if exempting the emissions from such activities would avoid any applicable requirement. Because total facility emissions are near major source levels for Prevention of Significant Deterioration purposes, a condition is included in the operating permit to ensure insignificant activity emissions are included in the total facility emission calculations.

## V. Compliance Assurance Monitoring (CAM) Requirements

No units at this facility are equipped with add-on controls in order to meet an applicable emission limit. The facility is therefore not subject to the CAM provisions of 40 CFR Part 64 § 64.5(a)(1)(ii), as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV.

### VI. Alternative Operating Scenarios

The permittee requested an Alternative Operating Scenario (AOS) to allow replacement of engines at the site. The Division's AOS for temporary and

permanent replacement of like-kind engines is included in the permit.

### VII. Maximum Available Control Technology (MACT)

Under the federal Clean Air Act (the Act), the EPA is charged with promulgating maximum achievable control technology (MACT) standards for major sources of hazardous air pollutants (HAPs) in various source categories by certain dates. Section 112(j) of the Act requires that permitting authorities develop a case-by-case MACT for any major sources of HAPs in source categories for which the EPA failed to promulgate a MACT standard by May 15, 2002. These provisions are commonly referred to as the "MACT hammer."

Owner or operators that could reasonably determine that they are a major source of HAPs which includes one or more stationary sources included in the source category or subcategory for which the EPA failed to promulgate a MACT standard by the section 112(j) deadline were required to submit a Part 1 permit application by May 15, 2002. Based on the information provided by this source, the Yosemite Air Blend Plant is a major stationary source of HAPs (i.e. facility-wide potential to emit of greater than 10 tons per year of any single HAP or greater than 25 tons per year of all HAPs combined) for a covered source category (Reciprocating Internal Combustion Engines) and did submit a Part 1 application prior to May 15, 2002. As of the date of issuance of this permit, a Part 2 application is due by April 28, 2004. That date, however, may be revised. Affected facilities that fail to submit a timely and complete application will be considered in violation and such violations may be subject to enforcement action.